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The BULLETIN of the AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTS

Volume 12, Number 1

February 1952

THE BULLETIN OF THE AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTS

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EMOTIONAL NEEDS OF CHILDREN AS REFLECTED IN PERSONALITY AND BEHAVIOR PROBLEMS*

Mary C. Roland, M.A.**

I should think that some of you, at least, must have questioned the importance of a topic relating to the emotional needs of children, at a meeting in which you expected stimulation and further knowledge of the principles of dental hygiene. In composing this paper I could not even think of a joke to tell you that might relate the two fields. I do, however, feel in a position similar to the five-year-old, who, after an altercation with his father, decided to pack his pajamas, and naturally, his toothbrush, and go away. Having seen him make several trips around the same block, a policeman asked him just what he might be doing. His reply was, "I'm running away from home but I'm not allowed to cross the street." In being on the program of a dental hygienists' meeting, I really have run away from home. But I want to cross the street half way, and meet you there; for some common ground does exist for all who work with children.

The certainty that emotional undertones accompany all situations in life, and indeed, anything relating to the physical, and the recognition that all persons dealing with children, particularly professional persons, have meaning to them, is my beginning premise in this discussion with you. In the prophylaxis of either dental caries or mental caries, our interests are mutually related to the conservation of children's health and well-being, and to the contributions we can make to their general adjustment. Basically and technically, our focus is very different. The parallels of dental health and mental health, while equidistant from each other, are equally important particulars of little human beings who are growing up, physically and emotionally. Children absorb from those of us who are supposed to have grown up in these areas, the attitudes, habits, prejudices, and the criteria of living which are a developing part of personality. We can deal successfully with these children, only as we recognize and implement in our everyday functioning with them the principle that the physical and emotional facets of a person--child or adult--are parallels which, realistically, must meet.

As I understand it, the school dental hygienist, though working with children individually, has contact with numbers of children. In a situation such as yours where time and numbers are important; where these pressures and others, such as the anxieties which may find expression in the focal point of dental work, test patience, endurance, and emotions; and where a dental hygienist may be made to feel that her work interrupts school routine, by those who have tangible evidence of the lack of dental hygienic personnel in an earlier day--in these circumstances, the dental hygienist must be convinced of the importance of her job. Only with this conviction of the importance of her own job responsibilities, will she be able to convey this feeling either to school personnel or to the children themselves.

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* Reprinted from The Pennsylvania Dental Journal, 18:204-209, October 1951, by arrangement with Dr. Linwood G. Grace, Director, Dental Division, Pennsylvania State Department of Health.

**Psychotherapist, Child Guidance Center, Harrisburg.

The emotional needs of children can be expressed otherwise, as the requirements which are necessary in a child's own make-up or in his environment, for his better mental or emotional health. Some children have more needs than do others. When the environment does not offer support to a child; when there is inconsistency in discipline from the parents, when a child feels proud of an accomplishment and this pride is undermined by casual teasing or belittling from an adult, or when there is comparison between him and his family about his school grades, his intelligence, the appearance of his teeth, or his general behavior, that child's needs begin to be greater than others. The child who does not find the necessary warmth and understanding in his relationship at home, will be the child who stands out most prominently in your contacts with him at school as sullen, unsociable, and withdrawn, or as one of the hostile trouble makers who makes trouble only because he, himself, is troubled. Any problems of personality or behavior indicate that the particular child who has them is unhappy within himself, and that something is going awry in his emotional growth.

In working with children, threats of disaster to the mouth and to the appearance of the face may seem like a good healthy approach to helping a child towards maintaining a well-integrated, good appearing physical self. It is undoubtedly superfluous to comment to you, about the impact a child feels when he hears that he will lose all his teeth if he doesn't drink his milk; that he will have his mouth bound up in braces if he doesn't stop sucking his thumb; or that his teeth will fall out, inch by inch, if he bolts his food. You are aware, I am sure, that it is the already anxious and unhappy child who refuses to eat, who sucks his thumb, or who attacks his food as if someone else will get it before he does. But as dental hygienists, you deal with parents in the home; and often, in your professional capacity, you will meet with parents who, just by virtue of being parents are emotionally involved with their children, who believe that any forceful approach to a child must be a negative approach, and feel that their child's way of expressing himself is motivated, personally, to annoy them. You have seen, that in their attempts to be helpful, parents can increase the tensions of a child who is anxious and unsure of himself. Those of us who work directly with children, either in short-term contacts such as yours, or in prolonged and continuing contacts as are mine, have the opportunity in every contact, to leave with a child the feeling of, "here is one person who is a friend," or one who is not.

Every person who, in any way, is a part of a child's everyday life has some effect on him. Any one of us, even in a casual or perfunctory contact with a child might, at the time, be the only person who handles him with understanding, or who gives him the impression of respecting him as a real person. It might be any one of us also, who, like the child carrying over frustrated feelings from other situations, considers the job a safe and uncritical spot to release these feelings. It is possible, then, to forget that our attitudes in working with children are important to them, not only in respect to their future orientation toward dental personnel, but in their general adjustment towards people. For children accept the world on the basis of how the world accepts them, and they treat it accordingly.

I do not say, by any means, that we must be stolid and unemotional with children. It is valid to become angry if we show the other person that the reasons are real. Supposedly being more mature than the child, however, there are times when we cannot, with validity, take his affronts as if meant personally.

A child who has been "frosted" (or bitten by emotional coldness) is very likely to try to freeze out others, to keep aloof from them, to defend himself against any closeness with them by a protective covering of stubborn, vindictive, or aggressive behavior. I should think you would meet this occasionally in your school contacts. For physically speaking, there is scarcely a closer inter-human contact, aside perhaps from wrestling or osteopathy, than the patient-dental personnel situation. In these circumstances a child who has no reason in his past experiences to be close to people, or who has real reasons for keeping his distance, will no doubt be extremely fearful of the threat of physical closeness to another. He may withdraw, even if a gentle hand is laid on his shoulder; he may bite, not because he is angry at you but because he is afraid; he may fight you if he thinks that you will be frightened instead of him. It is usually the apparently fearless child who is really the most fearful.

I mention the factor of physical closeness for two reasons. My first point is this: the interpersonal position that is inherent in the patient-dental, or patient-dental hygienist situation is a symbol to the child of the possibility of someone infringing on him as a person. The child who shies away from you, whether he be assaultive or cringing, is basically the kind who has shied away from others, and I do not mean in only physical ways. If you could know him better you would find that he is probably the kind who cannot let anyone get close to him in feeling, who thinks that everything he knows must be a secret, and who refers, in addressing people, to YOU, rather than in the personal and more conventional manner of using names. Some children cannot allow anyone else to be a person in his own right, especially if they feel that no one has given them that privilege. In a Child Guidance Center, to which, incidentally, children of this type might well be referred, we might find that it consumes a period of several interviews to establish with a too self-contained child, the kind of relationship which you are expected to fix almost immediately. There probably will be some children whom you can never reach, not because your own techniques are at fault, but because your situation with this kind of child points up his own problem, which may be in no way remotely connected with dentistry as such. That is my second point—that the problems you encounter personally, as professional people, may be related to many circumstances and people in the child's experiences elsewhere, and are not of your making. You may, at the moment, however, be able to begin, as one person, to undo some of the previous damage that a child has had in his human relationships.

The type of preparation which I understand you present prior to your actual work, is probably the most effective means of alleviating that unfortunate but traditional "fear of the dentist" which society never has been successful in obliterating. It seems important, too, that with the realization of what will be involved for the child, precautions be taken that he does not identify you, for example, as the "needle lady," for you might easily be considered so, in your white uniforms. One can scarcely know what thoughts might be percolating in a child's head in a first contact. It was not because of my own grace that one child who came to the Clinic and saw me for the first time, thought I was a dancing teacher; nor was it due to an array of instruments or a white uniform that another screamed that I would jag her with needles; and hardly can I think that my own belligerence was the reason for another's conceiving the unhappy thought that I would beat him up because he had stolen his mother's purse. Any such misconceptions on the part of a child presume that he has had poor preparation for a new experience, or less often, that he will not accept his need for it. When a child's need for help is urgent, immediate, and self-evident, he

will seek that help voluntarily. A child of secure parents who can be direct in telling their child why they need help together, always is much more ready to move into a new experience. Similarly, as I feel it important, always, to be direct with people, the child who knows what to expect, and why, in the way of dental treatment, undoubtedly will accept it more easily than if left to speculate for himself. And often it is of benefit to both the child and his supposed antagonist, the dental hygienist—to have him put into words what he thinks will happen to him in such a new situation, and just why he is afraid. Articulation of the feelings that he is living through, is a healthy way of avoiding the alternative of extreme behavior, extremes of reticence and withdrawal, or aggressiveness and assaultiveness.

It seems that a child's fear of the unknown is a fundamental problem. When this involves, also, the potential of another person's being in control of a situation of which he is a part; when it contains the implication of someone doing something to him, the risk to an already insecure child is even greater. The twelve-year-old boy who in discussing baseball, stressed "I like to pitch a ball to somebody else but I don't want to catch or bat" was saying essentially, "I can take the chance of doing something to the other fellow but I can't risk being someone else's target." I feel quite sure that this boy could not sit comfortably in a dental chair facing forceps and drill; for to him, and to others like him, he would be happy only if in the safer position of using them on someone else.

I should like to illustrate briefly with the instances of three children, all boys, whose personality difficulties were focused somewhat, in their own and in their parents' eyes, around dental troubles.

(1) Karl, age 9, had become a problem to his mother and the school. In his mother's words, "he bothers us because he is nervous. We see that he becomes more nervous when he's supposed to go to the dentist. He twitches his eyes, clears his throat, and coughs all the time when he's in the dentist's chair. Sometimes he holds his mouth tight shut. All of his trouble is because he's so afraid of the dentist. Of course, I was always scared to death of the dentist and so was his Dad. We can't bear to see him get his teeth drilled. We like it better when the dental hygienist takes him. Even then, I sit at home and worry. He's my baby, you know, and I never want him to have to worry about anything himself." Karl's uncertainties had some basis in the emotional contagion of feeling prompted by his parents' fear of the dentist. Undoubtedly, he picked up their anxiety when they shifted a responsibility that could have been his own or his parents', to the dental hygienist. Nor could he have escaped their protective worry about him, without responding to it as he did.

When I saw Karl for the first time he was a restless, uneasy, non-committal boy of 9, obviously very much afraid, and with a defined purpose of not sharing his feelings, his worries, or his fears. His stock reply was, "I don't care," but before this first hour was over Karl had broached the subject of his fear of the dentist, and additionally his "nervousness" at every new situation. Everything he said to me was toned with anxious feelings, and it was evident early, that here was a very tense, dependent little boy who feared what others—the teacher, his parents, the dentist—would do to him. He wanted to say "no" to everything, but being fearful

of not being accepted by others, he had to be a "yes" boy. The one place where he had been able to risk self-assertion and differing from his mother's wishes had been in relation to the dentist. He was such a docile, conforming youngster that he was no problem to his mother except in this area where he fought her. Hence, to her, his principal problem was in his refusing to go to the dentist. As he continued in therapy the discussion became diffused, and only occasionally did either of us mention the dental problem. Gradually, with the freedom given in psychotherapy, his inhibitions lessened and he dared to talk above a whisper, to soil his hands with finger paints, little by little to be noisier, and eventually to use a word or two of cursing. There were increasing evidences of self-confidence, and reports that he was beginning to stand up for himself and even to occasionally become involved in a scuffle. He arrived for his interview one day, beaming about "a black eye" he had acquired because he had initiated a scuffle at school. Gleefully Karl told of shooting paper clips at the school teacher and "laughing in her face." This was overt expression in a direct way, of the hostility he felt towards the teacher in the beginning, when he was giving her all the blame for his own difficulties. The teacher had somewhat of a difficult time accepting his release of inhibitions during this period of over-assertion, but became more tolerant when Karl, thereby, was no longer afraid to recite in school and could now risk giving answers. His self-expression was becoming more general and more balanced. He had previously commented, "Sometimes I don't know the words for sure, so I'm scared to say them at all." After several weeks of not mentioning the dentist in therapy he told, in his twelfth interview, of having decided to see him. In his seventeenth, and next to last interview, I quote, "I'm not afraid of the teacher or the dentist, or anything."

(2) The second instance, which I wish to mention briefly, is a 13-year-old boy, Bill, whose mother applied for service at the Clinic, because of the crises that arose at home. These, too, were at the time, focused around his facing going to the dentist. For weeks he would first think about it, then would decide to keep his own appointments but once he saw the dentist, would refuse to have any work done. His mother discussed the situation with the dentist, who was quite patient with Bill. Meanwhile, she kept after him constantly not realizing that she was intensifying the problem with a boy whose oppositional tendencies were prominent in any area. A little later on Bill's mother brought out that he had a few other difficulties too. His pattern of expressing his feelings was in very indirect ways. He wet the bed every night, tantalized other children and most of all his sister, and had facial mannerisms. He was the least close to his parents of three children.

I found Bill to be a large, huskily built and handsome boy of superior intelligence. He came for twenty interviews. In the beginning he was self-effacing and afraid to say that anything he did was of any value. In his second hour he spontaneously connected his lack of self-confidence with his fear of the dentist. He thought, also, that he had used this as one point where he could afford to assert himself, a quality which was missing, otherwise. His chief difficulty, he said, was that he could not bear to have people do things to hurt him. It developed that he had a good deal of resentment towards his mother and sister, particularly; could not stand up for his own rights, and he found it most difficult to discuss any of this at home. Because he could not say how he felt about people and situations, Bill had to express himself in such indirect ways, and ways which were often far removed from the source of trouble at the moment. Every so often, in his interviews, he would mention the dentist. He

began to generalize that his lack of trust in what the dentist would do to him was really a much broader lack of trust in anyone, even himself. He was generally suspicious, and in order to avoid the hurt of being criticized, he would expect criticism and therefore bring up his own defenses first—he was ever ready to use his defenses of withdrawal, keeping all feeling and emotion within himself, and leaving himself to the abandon of others, all the while resenting them without being able to say so. We felt that his own statement in ending his clinic interviews revealed a freedom that would cover his everyday life and his problems pretty well—"The most that I've gotten from coming here is that I can talk things over at home with my parents now. And since I'm not scared to do that, I don't have to be afraid of other things. Next year I can play football because I can stand my own ground. And before I do that I'll go to the dentist. Now I can talk over with him how I feel about that, too. The real reason I never liked that dentist is because his son and I had a big fight one time. But now I've forgiven him because I see that it was my fault, too. I think it's funny, though. I don't blame other people any more at all."

(3) The third example I wish to use is that of a 17-year-old boy, referred by a dentist who recognized that this lad, who was biting his inner cheek to the point of possible malignancy, probably had reasons for doing so. He definitely did. Pete, fatherless at the age of 3, was placed in a materially good institution when he was 6 years old (eleven years previously). He was the youngest of eight children who all were fairly irresponsible towards a mother who constantly wrote Pete of her poverty, unhappiness, and loneliness in the world. This boy, burdened with a sense of guilt based partly on fantasy, was feeling unrealistically responsible for his mother's plight. He was guilty at his own physical comfort in contrast to his mother's uncomfortable state, and kept biting at himself as if in punishment. There were others, especially his older brothers and sisters, whom, I am sure, he would like to have bitten; but without this opportunity, he directed his aggressive feelings towards himself. Had he been able to express these feelings verbally, he might not have had to act them out by biting himself. As Pete talked out his resentments he commented, "I don't carry around that heavy load any more. I'm not so guilty."

I mention this instance because I wish to point up to you the emotional factors that may precipitate some of the problems of children who come to your attention.

In closing, I wish to say that I hope it may be helpful for you to have this kind of understanding of the background and the motives of children's behavior which, so often, appears to have no rational basis in the children you see. We who work with children's emotional problems are always happy, on the other hand, to benefit from the insight that other professions can offer us in relation to our work. And now, after having come half way across the street to meet you on a common platform, as I mentioned in the beginning, I hope we can return to our respective homes, as the little boy did eventually, being richer in our feeling for, and understanding of the children we meet professionally.—1904 North Second St., Harrisburg.

WHAT CAN BE DONE IN YOUR COMMUNITY — HOW YOU CAN HELP*

Wm. A. Jordan, D.D.S., M.P.H.**

What are your dental needs? Do you know? What are the dental needs of your community? Are you interested in good dental health? Of course you are. Then you as youth leaders can help, because dental health is everybody's business: yours, mine as a dentist, the teachers, the nurse, the mother and the child's. All are concerned because good dental health is essential to your comfort, appearance, and general health. The dentist is interested in saving teeth, giving better and more services to more children. The nurse and teacher try to promote ways and means of stimulating you to desire better dental health. The results obtained vary according to your participation. YOUR DENTAL HEALTH IS IN YOUR HANDS.

What can be done and how can you and your community promote better dental health? The magic key to a community program appears to be a health council or committee. This health council is a group of citizens of your community representing all occupations and groups which go to make up the every day living and activity of your community, the professional groups, labor, civic groups, churches, and health agencies. A health council is defined as a community-wide committee which brings into one agency all local elements able and willing to contribute to better health planning. It is a coordinating and planning body—rather than a service agency—interested in all health projects. Through the health committee, citizens are expected to become involved to a point where they will not only become intelligent regarding presently known facts about dental diseases and measures of prevention, but also will take whatever action is needed.

WHAT CAN YOU AS AN INDIVIDUAL DO TO PROMOTE BETTER DENTAL HEALTH?

1. See that you take care of your own dental needs and practice good dental health.

2. Become acquainted with the facts of dental diseases, how dental decay develops and what measures you as an individual can take to help prevent such diseases. This meeting today has given you facts about dental diseases and preventive measures. With this knowledge, you can intelligently participate in any dental health committee.

3. Your interest in your own dental health will spread to a community-wide interest.

4. From your personal experience you can advise your fellow students as to the benefits of good dental health.

5. Take an active interest in your school dental program.

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* Read to the Youths of the 4-H Clubs, Future Farmers of America, and Future Homemakers of America at a Dental Health Conference, Museum Auditorium, University Campus. Promoted by the Minnesota State Dental Association, Sept. 27, 1951.

**Director, Division of Dental Health, State Health Dept., Minneapolis, Minn.

6. Help your parents to understand the facts regarding dental health and the advantages of the preventive and control measures used today.

7. Offer your services as a committee member on a dental health council. I think youth should be well represented on any dental health committee or council.

HOW DO YOU GET ON SUCH COMMITTEES OR COUNCILS?

If your group as an organization wishes to participate in such a program, let it be known to your local dentist, maybe your school nurse or your advisory teacher. Even your principal and superintendent should be informed of your action, and I am sure they will be happy to assist you and your group in taking an active part in the dental health program.

In case there is no such council or committee in your community, you might be the interested group to initiate such an organization. Here I would contact my local dentist and get his advice and assistance. Write to your county public health nurse and ask her help, also write to your state health department for direction and suggestions. Many times there is absolutely no interest in dental health in the community and the people cannot see the advantages of a dental health committee. If you can demonstrate to the people how their children will benefit by such an organization and have definite examples from other communities, you will help create a local interest. The Askov Dental Demonstration is a good example. A few mothers in a club were concerned about the dental health of their children. They asked for assistance from the area dentists and the Minnesota Department of Health. Interest was gradually created from group to group, person to person, until now we are demonstrating and studying what can be done in the control of dental decay through what we term a complete dental health program. This program includes dental health education in school, home, and community. Dental preventive and control measures are used, and complete dental care is available for all who desire such services. This is a community program directed by the local dental health council with the assistance of the Pine County dentists, the Minnesota State Dental Association and the Minnesota Department of Health, with financial aid from the U. S. Children's Bureau.

I heard Dr. Howard Pierce Davis of Boston, Massachusetts, lecture on the subject "My Magic Key Ring." He had five magic keys, and they fit well in the organization of a community program and committee activities.

1. Key One - IMAGINATION - the ability to dream, to plan, and to be able to see ahead. That is so necessary in your community planning, and particularly in public health. We must be factual; we must be practical; but we must also be able to visualize the possibilities. What can you see on the other side of the horizon; where will your plans lead you? Our Askov Program is a ten-year demonstration developed and planned through a vision of the future. An individual with good imagination and the ability to plan will be of great help to your health committee.

2. Key Two - MEMORIES - the ability to remember what has happened in the past, so we might avoid the mistakes and promote that which is most beneficial to all. Let us not duplicate, but learn from our mistakes. Try out methods until they prove wrong--then try others—but keep trying.

3. Key Three - WILL, RESOLVE TO DO, DETERMINATION. How necessary this will and determination is, with a group that wants to succeed! With the will to do, half your work is accomplished. Referring to our Askov Dental Demonstration again, it was the will of the people to have something done for their children's dental health that succeeded in developing the present program. It took about two years to get even an outline of a program accepted by all the interested groups. They were determined to produce the best type of study possible, and the Minnesota State Dental Association with the people of Askov and the assistance of the Minnesota Department of Health and the U. S. Children's Bureau has produced one of the outstanding community dental health programs in the country.

4. Key Four - GOODWILL, EMOTION. Committee members must have the good will of the people at heart. Do not let your selfish emotions bury your services and assistance to your community. Let us help the public to help itself. There are times when the dentist will wisely contribute his service to a community dental health program, even at the sacrifice of some of his valuable office time.

5. The last of the five magic keys refers to the CAPACITY OF FAITH, THE POWER TO BELIEVE. I, for one, believe as well as think. If we have that power of faith in our fellow workers, our program will succeed. Rather than a negative attitude, a positive stand must be taken. Know that that which you are promoting is for the best, and have no doubts. BE FOR SOMETHING and not always against it.

Dental disease is a public health problem which begins with the very young and reaches a high peak of destructiveness in youth. Therefore it is essential and wise to have youth such as you on all dental health committees. Youths will have valuable suggestions to make, because they know how they react to such programs, and will give much assistance in directing the promotion of good dental health programs in their communities. Here is an opportunity for applying education through participation. Youth will be learning as well as helping.

The three "R's," REASON, RESOURCEFULNESS, AND RESPONSIBILITY, like the five magic keys, are adaptable to the organization of your community program. You will want to know the REASON. Why do we need a dental health program in our community? What is the reason for so much dental care? Be able to think and think straight. Uncle Abe remarked, "When I work, I works hard; when I set, I set loose; and when I think, I fall asleep." You do not have to fall asleep to think, but many times I think best by closing my eyes, shutting out my environment, and concentrating on one thought. One must be alert and ready to grasp the opportunity when it arises. REASON - Why is a dental health program necessary in your community? What must we do to promote it?

The second "R", RESOURCEFULNESS, is particularly essential in health programs. Your committee will want to study the resources available in your community and take advantage of what presents itself. Study the problem and then make plans to approach it. As a member of the committee, one finds himself trying to bring about three things:

1. Dentists, health departments, and schools working together.

2. Education of the people as to the nature of dental diseases, preventive measures as known, and recommended treatment.

3. Financing of increased services or programs showing what the community can do.

It is important to get broad participation of the people in doing something for themselves regarding their dental health. The actual application of good dental health is IN YOUR HANDS. The Askov Program is an example where all the people, business men, fraternal organizations, civic groups, teachers, parents, and students, were brought into the planning with the dentist and health workers. To demonstrate the resourcefulness of a committee in the Askov program, tooth brush drills in the grades were required. The school did not have the facilities to conduct such a program, but through their resourcefulness and thinking, the committee built a trough in the shower room which will accommodate 10 children at a time. Thus, a class can go through the brushing drill in a few minutes.

The public today is more conscious of dental health than ever before. This is the opportune time to organize your needed dental health program on a community basis. That program must serve a purpose and it must be practical to succeed. In many communities, local organizations such as the American Legion, P.T.A., Elks, and others have a health committee that might be directing some interest to dental health. Find these programs and learn what they are working for. See if the efforts of these various groups cannot be concentrated on a unified community program.

In planning your community participation, you will need to consider these questions:

1. ARE THE CHARACTERISTICS OF YOUR POPULATION KNOWN?

What is the economic level of the group? How far does your proposed program reach? In what group of people does your problem exist and what age group will be involved? As far as dental health is concerned, the economic level has little bearing on dental ills. The wealthy as well as the poor are confronted with dental decay and loss of teeth. But there is a problem in services available to the poor and those who cannot afford dental care. It becomes your problem, as a community committee, to determine how you can best serve your people.

2. WHAT PER CENT OF THE POPULATION IS REACHED THROUGH EXISTING COMMUNITY ORGANIZATION?

There are several agencies in your community directing and supervising health programs and health services, such as your schools, welfare department, city health department, Red Cross, Minnesota Public Health Association (T.B. seals). Each of these has a special group of the community's population with which it is concerned. The welfare agency cares for the aged and some welfare children. Then there is the blind agency for the blind, etc. A community-wide program on dental health should be directed to all in the particular age group concerned in your program. All who are interested should be invited to participate. Direct the policies of your program in

such a manner that the people concerned will have an opportunity to choose. In the Askov program, age groups 3-17 years were included because, as we stated, dental disease begins early in the child's life and we want the program to begin with the beginning stages of the disease, to prevent as much loss of teeth as possible. In Askov the DMF rate (decayed, missing, and filled teeth rate) was very high in all age groups. Therefore the community decided that all children should be eligible for the benefits of this program.

Why are high school youths uninterested in any dental health program? Perhaps you can help us and tell us why. This is a very important age. During high school the girl becomes conscious of her appeal to the opposite sex. Clean, well-kept teeth play an important role in making a girl attractive. The young man will find on his graduation that dental health will likewise play an important role in job hunting. In your youth you should be vitally interested in dental health. Start now and help plan programs that will give youth sound, healthy teeth and avoid the statements that your mother and father so often made, "I only wish I had had the opportunity of having dental care during my youth, as you have today." Don't make the same mistakes. Young people are expected to profit by the mistakes of their elders.

3. WHAT PRIORITY DOES DENTAL HEALTH HAVE IN THE MANY GROUPS THAT MAKE UP YOUR COMMUNITY?

There are many people to whom dental health is not important and they have definite reasons. This applies to youth as well as adult groups. Grandma feels that false teeth are inevitable and the sooner you get the ordeal over with, the better. You have the "Doubting Tom" who never believes in anything. Then there is the agitator who continually blocks positive programs and their promotion. Here is where you can help. You who believe in the value of good dental health have a big job of educating and removing the blocks to progress. Much of our educational program--including radio and posters on dental health--has been hit and miss. The information does not reach the individuals most concerned. You in your local groups, who have a special interest in health, can help get factual information to your families and friends. Neighborly conversation on such subjects does much to promote good dental health.

A couple of summers ago, our department made a study of the amount of candy and pop sold in the schools only. You and your fellow students from the first grade through high school spent some $770,000.00 for sweets, which, here today, we have told you are harmful to your teeth. The dental and medical profession throughout the country, your school superintendents, and now the congress P.T.A.'s has asked and recommend that all candy and pop dispensers be eliminated from the school buildings. WHY? Because they are harmful to the practice of good dental health. Put into practice your teachings and knowledge acquired.

As youth leaders, you can help by taking a realistic attitude to this request. Help us to help you and your fellow students. It is not the intention to deprive you of these luxuries entirely, but only to make you aware of the facts and temper your consumption of such sweets. You can help by making other students understand the problem.

4. WHO ARE THE "NATURAL LEADERS" IN YOUR COMMUNITY GROUPS - WHERE DO YOU FIND THEM?

In talking about a natural leader, we are referring to an individual who is a natural-born leader, one who is liked by the group he works with and for. We have many types of leaders. There is the leader in name only, who does nothing to promote the program. There is the leader who dominates the group and gives the individual no opportunity to express his views. This type will defeat your program in a hurry. The "natural leader" with the proper training and instructions on dental health would be a big asset to your program. YOU MIGHT BE THE LEADER we are looking for. Members of the committee will gain much working with each other. I hope here today you will be free with your suggestions and questions. Each of us will be learning as well as giving. Your ideas, your suggestions might be just what are needed to make a dental health program a success. We, too, are here to learn.

5. WHAT IS THE "POWER" STRUCTURE IN YOUR COMMUNITY?

I'm talking to you now as a member of a dental health committee. There is generally a "power" behind your council or board of education. Awareness of its existence will make the promotion and success of your program smoother. Contact these individuals or groups and get their support and you have the support of your council or board of education.

The builder lays his bricks one by one and cements them in place. So build your program. Determine your needs, evaluate your resources, study your finances, and then decide on your first step. Establish that first brick firmly and fast, then build step by step, brick by brick. Allow open discussion in your meetings and welcome differences of opinion. Do not ignore any one individual's --or any group's--thinking in your planning.

As it takes time to construct a complete building, it takes time and energy to build a complete dental health program. If the committee cannot see the possibility of establishing a complete dental health program--including dental health education, prevention and control methods, and good dental care--start with one phase and build, until eventually you have your complete dental health program.

This is where the third "R" takes hold - RESPONSIBILITY. We all have a responsibility to ourselves, our family, and then to our community in regard to dental health. The dental profession has a responsibility to you, the public, to serve you in the best manner possible; to provide you with the best means to promote good dental health; to see that the public is properly informed regarding dental ills and means of control and prevention. All these the dental profession is carrying on in connection with the Askov program. Today you are informed of the facts governing good dental health. And, lastly, the dental profession is responsible for providing you with good dental care.

In Minnesota we have a dental card program involving increasing numbers of students each year. The annual reports have shown fine participation through the elementary grades. We do have our problems, however, in the

high school age group. In this reporting program, the high school student has taken the attitude that he is being disciplined. You are at that important age of self-discipline, self-diagnosis, and self-decision. You wish to put into practice that most widely expressed, most widely misinterpreted "Bill of Rights." Remember, "we are our brother's keeper." We live in a community of many people and we must govern our actions as they affect our neighbor as well as ourselves. As a youth leader, you can help make this card program more effective in high school. Make this program <u>your</u> dental health program, possibly by directing its action through your student council. As a high school student, take a scientific attitude toward these programs and see how you are helping to provide dental statistics. By the same token, you are benefiting yourself by bringing about better dental and general health. Individual opinions will differ from yours, but through committee organization and group thinking, you, as a member of the committee, as a high school student, as an individual will help express the committee's desire.

A type of community dental health committee which appears to fit the need for reaching people on their own terms is one in which responsibility is vested in lay citizens with members of the dental profession in an advisory and consultant capacity.

AGAIN - WHAT CAN YOU DO TO HELP?

1. Start by seeing that you, yourself, have good dental health and practice good dental health procedures.

2. Become well acquainted with the facts regarding dental diseases and the means of control and prevention for dental decay.

3. Take a vital interest in your school and community programs by offering your services to committee activities.

4. Make your desire to help known to your local dentist, school personnel, and health council members.

5. Keep in mind the five magic keys: imagination, memories, determination, good will, and faith in your fellow member. Individuals equipped with these assets will make the best of leaders.

6. Study your community needs and determine the reason for a dental health program. Next, study your resources and possibilities.

7. In organizing your program, you want to know something of the community's characteristics, existing programs, people's attitude to dental health, and who are your influential citizens.

8. It is important to remember that everybody be in on the original planning, including your local dentist, school authorities, nurses, and most important, youth representation.

9. Build your program gradually, step by step; once your program is established and operating, keep working. Do not relinquish your interest or promotion. You may then have a successful program which reduces results and benefits for those it serves. Good dental health is everybody's business.

SAMPLING PROBLEMS IN DENTAL SURVEYS*

A. L. Russell, D.D.S., M.P.H.**

While all dental surveys are carried out upon a sample of the population under study, not all such samples are selected by that specific process called sampling.

The law upon which all sampling is based is quite simple. Briefly, if a small number of persons is drawn at random from a larger population, that small number will tend to exhibit the same characteristics, in the same proportion, as the larger population. The key word in this definition is the word "random." In practice, sample randomness is usually achieved through one of two basic methods.

The first method requires a complete listing of all the persons in the population (or "universe") to be studied. Individuals are drawn from such a list by taking every nth name, or according to a table of random numbers, or simply by drawing names from a hat, until a sufficiently large sample has been assembled.(1-3) The second method, called "area sampling", is one frequently used by the Bureau of the Census and, in essence, draws the people, or a sub-sample of the people, who live in a random sample of city blocks.(4) These methods are described in the literature cited.

Each of these methods requires formidable advance preparation, with the meticulous application of appropriate technic. Though the ultimate number of examinations is reduced, the time per examination may be greatly increased, due to time lost through frequent moving of equipment and follow-up procedures dictated by the requirement that substantially all of the specific individuals selected for the sample be found and examined. For these and other reasons random samples have rarely been used in dental studies which, in the past, have ordinarily employed representative samples instead.

Very useful and dependable information may be elicited from the representative sample. Random sampling, in fact, tends to correct only one of the several errors which may mar a survey result.(1) This error is small when dental caries experience is under study, because the differences in caries experience between two groups of the same age, sex, race, and way of life in any one community are ordinarily unimportant. Since this is true a rather good guess as to the total caries experience of all the school children of a given community may be based upon the findings for a few representative schools arbitrarily selected for examination.

On the contrary, levels of dental care tend to vary widely from group to group, and even within an apparently-homogenous group, in either children or adults. Two factors which influence the level of dental care—the availability of dental service and the ability to pay for such service—are easily estimated, but these factors are sometimes over-shadowed by an uncorrelated desire or lack

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of desire for dental care, an almost-intangible force which is influenced by that infinite number of things which determines human attitudes. The same schools which furnished the basis for a very good guess as to the total caries experience in the community may be utterly misleading if the total need for dental care is to be calculated. This is the limitation of the representative sample and the distinction between data from such a sample as opposed to data from the random sample. Random findings, if properly assembled, may be applied to the entire population from which the random sample was drawn. Findings for a "representative school" apply to that school and to that school only. Hence it may be argued quite plausibly that an estimate of total dental need in a population should be based upon either a truly random sample or upon an examination of the entire group.

The tendency, in dental public health practice, has been toward this latter course; and this trend has been accelerated by the development of streamlined examination methods which permit rapid surveys of large numbers of children and which yield all of the basic information required for program planning and evaluation.(5)

The present discussion is concerned specifically with pre- and post-fluoridation surveys, but it is difficult to conceive why such surveys should differ in any way from those designed to evaluate any other dental health program. It is no longer necessary to prove that fluoridation will inhibit dental caries; that fact has been demonstrated beyond the possibility of doubt. Neither is fluoridation a complete dental health program in itself. It cannot eliminate the need for dental health education and the need for dental treatment. The fact that three weapons instead of two may now be brought to bear upon the mass problem of dental caries in no wise diminishes the need for periodic evaluation of the program, nor does it modify any of the standard tools which have been developed for that purpose. On that hypothesis the following tentative principles are offered for consideration and discussion, with the full understanding that the exact procedure in any specific situation must be governed by the resources at hand and the information to be discovered.

Statistical assistance will always be required, and it is wise to consult at the outset with the person who will analyze your raw data after they have been collected. There is no universally-safe sample size, but your statistician can estimate for you what your sample sizes should be, and may be able to suggest procedures which will facilitate and simplify tabulation of your material.

Considering what you want to know and the character of the population to be surveyed, the simplest and swiftest examination procedure adequate to your purpose should be selected; otherwise the survey work-load may become too heavy to carry. There are, today, 127 communities on record as fluoridating their water supplies and hundreds more are well along in their planning for this measure. You need not sacrifice validity for speed. The earliest demonstrable effect following fluoridation will probably be a marked increase in the number of caries-free kindergarten children; possibly the most significant long-term result will be a reduction in tooth mortality indices. These and many other effects can be demonstrated by tongue-blade examination, are fully dependable, and are readily understood by the lay public.

Exact criteria, as objective as they can be made, should be established and recorded in full as part of the survey record. Subsequent surveys should be made as comparable as is possible. Once a given method of examination and definite criteria are set up they should be employed without modification each time the community is re-surveyed.

When swift procedures are used, it is often practicable to examine all of the children in the community. When numbers are too large for complete examination this problem may be met by examining a representative school from each of the "communities within the community," or by examining all of the children in selected grades or age groups, or by a combination of these two approaches. When selected age groups are examined they should be chosen for some salient characteristic—for example, caries in deciduous teeth is best observed in children of kindergarten age, or caries of the permanent incisors and permanent tooth loss in teen-age children. Any given group should reflect an inhibition of dental caries if the appropriate time has elapsed, but estimates of dental needs should be hazarded with great caution unless all children in the population have been examined or a true random sample is used; when representative samples are used findings may properly be cited as "typical."

When the survey is made, very little effort is required to record the additional basic data required for evaluation of the total dental health program.

SUMMARY

Pre- and post-fluoridation dental surveys require no new technics; they may be carried out in the same manner as the surveys now standard practice in program planning and evaluation. The statistician who will analyze the final data should be consulted when the survey is planned. Sampling problems can be avoided by the use of swift survey methods which facilitate the examination of all children in the population. Where this is impracticable representative rather than random samples may be used if the limitations of the representative sample are kept in mind.

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CURRENT STATUS OF THE WATER FLUORIDATION PROGRAM*

John W. Knutson, D.D.S., Dr.P.H.**

It is now more than a year ago that your Association endorsed controlled water fluoridation as a mass procedure for reducing the incidence of tooth decay. Your endorsement was an important one among those of virtually all the national organizations concerned with promoting dental health in this country. The other organizations include the American Dental Association, the American Public Health Association, the Association of State and Territorial Dental Directors, the American Association of Public Health Dentists, and the United States Public Health Service.

Some of you may feel that it is too early to evaluate progress in promoting application of this remarkable preventive procedure. You may feel that too short a time has elapsed. Nevertheless, my recent contacts with State health department personnel reveal that it is not too short a time for some of them to express full satisfaction with the current rate of progress in fluoridation. Therefore, it would not appear out of order to examine objectively the evidences of progress and try to estimate where we are and just how fast we are getting to where we ought to be.

First, let us take a look at the size of the water fluoridation job. There are approximately 16,750 public drinking water supplies in this country. Some of these already have optimum amounts of fluorides or excessive amounts. When we subtract these from the 16,750, we still have well over 15,000 public water supplies to be fluoridated. At present, 138 of these 15,000 have controlled fluoridation in operation. However, only 80 of these 138 communities started adding fluoride to their water supplies during the last 12 months period. At an annual rate of 100 communities a year, instead of the past year's record of 80, it will require 150 years to do the job ahead of us.

Perhaps a rate based on one full year of experience isn't very reliable. Therefore, it is of interest that the Wisconsin State Board of Health has been at this job since 1945, or for six years. During that six-year period, 60 community water supplies have been fluoridated. Since there are more than 300 public water supplies in the State of Wisconsin, it would appear that it would require almost thirty years to do the job in that State.

I can assure you that I am hoping, as many of you may be thinking, that this method of calculation produces overly pessimistic results. I am sure all

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of us can readily agree that it is not going to require 150 years to get the job done because we just won't let it take that long. I think we can readily agree, too, that it's not going to require thirty years because we would not want to concede to a plan which would take that long. I hope, too, that we are in agreement when I say it would be an extremely poor job if we let it take us more than 3 to 5 years to get the job done.

Now let us take a look at some of the probable reasons for the slow, creeping kind of progress we have been making in fluoridation. First and foremost, the job is being held up because of a shortage of qualified personnel in State health departments. In virtually every case the fluoridation job was handed over to an already overworked staff. The reaction, it seems to me, was a natural and human one - "Let's not promote this thing any faster. They've already got us working day and night." And as you know, we of the Public Health Service have not helped to stave off requests for services from State health departments. Almost without exception requests received for information and help have been referred to your departments, with the statement that we are sure you will be glad to be of assistance.

But unfortunately, we are somewhat in the same boat as you are. For example, until recently we had only one sanitary engineer who could be considered an expert in the field. In many instances, we could not honor your requests for his services. But steps have been made to alleviate this condition. We are now attempting to make available to you one water fluoridation engineer in each of our regional offices.

To bring this problem of personnel into sharper focus, it would seem desirable to examine some of the jobs these men will have to do in State health departments. If over-all responsibility for promoting the fluoridation program has been assigned to your State Dental Director, he will need the help of at least one other dentist. With this help, I think he will want to do these things:

1. Collect, analyze, and organize all scientific data relating to controlled fluoridation of drinking water, and maintain a current file of information on water fluoridation, including background material, technical phases of operations, results of pilot projects, types of fluoride feeding equipment, fluoride compounds available for use, and costs.

2. Supervise the development of educational materials; for dentists, other professional personnel, and the lay public.

3. Encourage the dentists of each community to plan and schedule a meeting of local dental, medical and other professional health personnel for the purpose of discussing all aspects of fluoridation and of considering the formulation of recommendations for the use of this tooth decay preventive measure.

4. Encourage and assist representatives of local service organizations in planning and scheduling meetings for public discussion of water fluoridation and provide for the participation of informed dental and other technical personnel.

5. Provide for a preliminary survey of the community's water supply so that useful estimates of equipment needs and costs can be made available for use at meetings scheduled for discussion of fluoridation.

6. Provide expert technical services to communities which have formally decided to fluoridate their water supplies.

7. Provide expert advisory and emergency services to communities after fluoridation has been initiated and as operational, fluoride-testing, equipment and supply problems arise.

8. Provide for the collection of base line data on dental caries prevalenc so that a periodic evaluation of the effects of fluoridation can be made in each community. Promote the use of standard record forms and provide advisory services relating to the processing, analysis, and utilization of the data collected.

9. Coordinate all promotional efforts relating to fluoridation and assume responsibility for establishing and maintaining a close and effective working relationship with the Sanitary Engineering and Laboratory Divisions of the Department.

Since many of the technical phases of a water fluoridation program involve sanitary engineering and laboratory functions, you will want to be prepared to provide the following essential chemical and engineering services to each community.

1. Chemical analysis of the drinking water supply, including fluoride determinations.

2. Study and analysis of sources and capacity of water supply, consumption rates, purification methods, types of distribution system, and population trends.

3. Determine the point in the water processing system where fluoride compounds can be added most effectively and efficiently.

4. Determine which fluoride compound is most suitable for use in the water system.

5. Determine the type of fluoride feeding equipment to be installed and the effectiveness of proposed controls for maintaining the proper fluoride concentration.

6. Determine storage facilities necessary for maintaining an adequate supply of the fluoride compound.

7. Determine needs for auxiliary equipment to insure adequate protection of water plant operators who handle the fluoride compound.

8. Determine type of fluoride test to be used, frequency of its use, and at what points in the distribution system samples should be collected for testing, so that the proper fluoride concentration can be maintained.

9. Provide specifications for equipment, approve or disapprove plans, and inspect completed installations.

10. Orient and train water works operators and personnel in the hazards of handling fluoride compounds, how the hazards can be eliminated, and how to feed fluorides properly.

11. Train water works personnel to make chemical tests and tests for determining fluoride concentration.

12. Provide periodic determinations of fluoride concentrations at the State health department laboratory so as to check the results of tests made by local water works personnel.

I am sure these chemical and engineering services will have to be made much more readily available to communities than they are at present. If they are not, the fluoridation of public water supplies in your state will be seriously hampered and delayed. Incidentally, these services will have to be made available in addition to the services rendered by engineering firms employed by individual communities to blueprint equipment plans. After all, the State health department needs highly qualified personnel to carry out the job of approving or disapproving fluoridation plans submitted by contract engineering firms. I am sure you will find in most instances that your experiences will be similar to those of the Wisconsin State Board of Health. In that State, consulting contract engineering firms lean heavily on the State health department for technical instructions and guidance.

We arrive then at a basic, minimum, additional staff. Such staff must be added to each State health department if it is to promote water fluoridation more actively, and expedite the fluoridation of public water supplies. The basic minimum staff would include at least one dentist, one sanitary engineer, one chemist, and one sub-professional technician. Their full time efforts would be directed towards promoting and servicing the water fluoridation program. They would be occupied to a great extent with training local personnel and assisting them in getting ready for the fluoridation job.

We stated earlier that there were 16,750 public water supplies in this country. Ninety-three per cent of these water supplies serve communities of 10,000 population or less. This fact is of tremendous importance to State health departments. It means that in more than nine out of every ten cases, a trained water works engineer probably will not be operating the local plant. It means that in nine out of ten cases dentists and engineers from the State health department will be expected to participate in public discussions relating to the desirability of fluoridating. It means that either on-the-job training or training centers for water works operators will have to be established by the State health department. It means that a central source of highly competent technical expertness in the field of water fluoridation will need to be available to communities in solving installation and operational problems. But from another aspect it means that here is an unusual opportunity for State health departments to offer an extremely important service unit to virtually every community in the State.

Now we might logically ask: What is the urgency of getting this particular job done? First, of course, is the fact that through water fluoridation we can assure a two-thirds reduction in the incidence of tooth decay. This in itself represents a tremendous stride towards improving the dental health of individual communities and the Nation. However, there is bound to be a certain vagueness in any general statement on improvement in health. But in this case, the improvement can be stated in specific terms — in cold dollars and cents. It can be stated unequivocally that no community can now afford the luxury of continuing to use fluoride-free drinking water. The cost of continuing to do so is tremendous. A very conservative estimate of the money worth of fluoridation shows that one dollar expended for fluoride prevents the need for spending from $60 to $70 for dental care. At an annual cost of 10¢ per person at least $6 or $7 out of every $10 which should be expended for care resulting from tooth decay and its consequences can be avoided. I do not mean to imply by this that we look forward to a marked reduction in present expenditures for dental care. Today, less than 30 per cent of the dental care needs of the population are being cared for. Through fluoridation and the current rate of expenditure, we can move much more rapidly and surely toward the goal of adequate care for all.

Many of you who experienced the difficulties of promoting chlorination of drinking water supplies will readily recall the many sources of opposition to that important program. The same ones, new ones, and even more bizarre ones are being raised against the fluoridation program. I need not cite them. I am sure most of you are familiar with them. They are difficult to combat particularly when it seems apparent that more personnel time and money are being expended by those who oppose water fluoridation than we are spending in promoting it. The contest is increasing in intensity and every case of water fluoridation which is postponed because of the "big doubt" adds another reason why the next, and the next community will hesitate, procrastinate and postpone fluoridation. The tricks being used range from merely calling it "mass medication" to hailing it as a tool of the communists. Such red herrings may be ridiculous, but that does not deter the opponents of fluoridation. They are employing every trick with the hope that by a shot gun approach one pellet may do the job. However, there is no question that this opposition can be overcome. It can be overcome by providing the truth, facts, and the necessary services. It can be done if we public health workers assiduously do our job of bringing about early and widespread application of new preventive methods. It can be done if for the year ahead, each State health department sets as its goal and prepares for the fluoridation of one-third of its community water supplies. That goal for the average state will be equivalent to the achievement of the whole Nation for the year which has passed since the last annual meeting of this Association.

THE NATIONAL RESEARCH COUNCIL FLUORIDATION REPORT

On November 29, 1951, the National Research Council, through its Division of Medical Sciences at 2101 Constitution Avenue, Washington 25, D.C., made public the report of its ad hoc Committee on the Fluoidation of Water Supplies. The following day the report was transmitted to Mayor Thomas D'Alesandro, Jr. by the Commissioner of Health who wrote: "This Report which is very satisfactory has just reached me during the past half-hour, and I feel sure that now it will be well, on the basis of these findings, for Baltimore City to move forward with the plan you have sponsored so actively to take this important public health step."

The City Health Department is in the closest working relationship with the City Bureau of Water Supply, the State Department of Health and the medical and dental professions in the matter of plans, with every available scientific safeguard and control, to adjust the fluorine content of Baltimore's city water supply to the optimal amount for the purpose of preventing dental caries as far as this is possible. The precedent of adding chlorine to the water for preventing typhoid fever comes readily to mind. As stated in the national report: "In the accumulated experience there is no evidence that the prolonged ingestion of drinking water with a mean concentration of fluorides below the level causing mottled enamel would have adverse physiological effects." The text of the Committee's report is worthy of careful study and is here reproduced as follows:

Report on Fluoridation of Water Supplies

This Committee was convened and directed to express its judgment as to whether, on a basis of a review of the present status of scientific knowledge, supplementing the fluoride content of public water supplies for the partial prevention of dental caries is a desirable and safe procedure from a physiological viewpoint. Specifically, it has been advocated, where necessary because of the deficiency of this element, that the fluoride content of the public water supplies be adjusted to insure a mean content of approximately 1 p.p.m. of fluorine. While some aspects of water fluoridation are still in the experimental stage, its application has been shown to be technologically practical and economically feasible. However, it remains to be determined by each municipality contemplating installation of this procedure (1) what benefits may be expected, and (2) what the potential liabilities are. After reviewing the available evidence, your Committee believes that the following are the principal considerations, briefly stated, upon which judgment must be based.

Fluorine and Nutrition

1. Under normal conditions of living, fluorine is a trace element in human nutrition (McClure, 1951). Minute amounts are absorbed from certain foods and drinking water and, to a limited extent, are retained by dental and osseous tissues. The quantity of fluorine ingested in food is a relatively unimportant variable; the average diet contains 0.2 to 0.3 mg. daily. Of greater import is the variable quantity ingested in drinking water. Many of the public water supplies in the United States, particularly those of the large cities, derived from rivers, lakes and ponds, are practically fluoride-free; others contain from traces to 1.5 p.p.m. fluorine as fluorides. A

number of supplies (Hill and others, 1949), particularly those obtained from deep wells and aquifers irregularly distributed in various parts of the country, contain from 1.5 p.p.m. up to 7 or 8 p.p.m., very rarely more.

Relationship to Dental Caries

2. From the epidemiological investigations of Dean (1946), there is convincing evidence that within certain limits there is an inverse relationship between the natural fluoride content of drinking water and the frequency of dental caries in children dependent upon these supplies. The most useful index of the amount of caries is the number of decayed, missing and filled permanent teeth (DMF) per child, per 100 children, or per 100 permanent teeth, at specified ages. Dean's original observations were based upon 7,257 selected white school children aged 12-14 in 21 cities of four states. The prevalence of caries (DMF) was greatest in those children who had used continuously from birth the public water supplies which were fluoride-free. The prevalence was progressively less in comparable children reared in cities with public water supplies having a fluoride content up to approximately 1 p.p.m. Beyond this concentration there was little, if any, advantage. Children reared in cities where drinking water contained approximately 1.0 p.p.m. of fluorine experienced only about one third as much dental caries as those reared in cities whose water supplies were fluorine-free (Dean, 1949). These basic observations have been confirmed and extended by investigators in this and other countries.

3. The caries-preventive effect of adequate fluoride intake is principally conferred upon children when the dentine and enamel of the permanent dentition are being formed, i.e., from birth up to about the twelfth year. There is evidence that this increased resistance to dental caries is carried over to some extent into later life, so that at least there is a delay of several years in the incidence of caries (Forrest, 1951). A recent detailed epidemiological study of adult populations (Russell and Elvove, 1951) considerably extends knowledge in this field. These observations show that marked caries-inhibitory effects of fluoride waters are operative in the 35-39- and 40-44-year-old-groups.

4. A considerable number of experimental studies have been conducted in the laboratory to explore the inhibition of induced experimental caries in rats and hamsters by fluorides and to explain this action. The results give consistent support to the concept of a relationship between human caries and fluorides (McClure, 1951). While it appears probable that caries resistance is associated with the incorporation of fluorides into the tooth structure, the exact mechanism by which it is mediated is unknown. The causes of caries are only partially understood.

Safety Levels

5. The margin between the optimal quantity of fluoride in drinking water which is required for maximal benefit in tooth development and the amount which produces undesirable physiological effects is sufficiently wide to cause no concern. The most sensitive indication of the latter is the enamel defect of the permanent teeth known as endemic fluorosis, or mottled enamel. The epidemiological studies of Dean (1942), based upon examination of 5,824 white children in ten states, showed a direct correlation between severity of the manifestations of mottled enamel and the increasing fluoride content (up to 5 p.p.m.) of the water supplies upon which they were dependent. At approximately 1.0 p.p.m., less than 10 per cent of children show the least detectable

evidence of disturbances in enamel formation, which are not visible except to the trained eye of the examining dentist. Beginning at about 2 p.p.m., an increasing proportion of children have mottled enamel of a grade that is easily apparent. While such teeth are caries-resistant, they are esthetically objectionable.

6. While the safe level of fluoride concentration to afford a maximum caries-preventive effect without mottled enamel is approximately 1.0 p.p.m., it varies somewhat with climatic and other factors and must be ascertained for each general area (Dean, 1951). For practical public health purposes, it has been proposed that a safe level has been reached when not more than 10 to 15 per cent of children age 12-14 years, who have used water supplies since birth, and who have been examined under standard conditions, show the mildest detectable type of mottled enamel. Under the climatological conditions prevailing in the Chicago area, where the mean annual temperature is about 49° F, this upper limit has been reached by domestic water supplies containing approximately 1.0 to 1.5 p.p.m. fluoride. On the other hand, in the vicinity of Moultrie or Brunswick, Georgia, with a mean annual temperature of 68° F, the upper level has been found to be associated with water supplies containing only 0.5 to 0.7 p.p.m.

7. There is an extensive literature on the pharmacology and toxicology of fluorine and its compounds. This has been reviewed by several authors (McClure, 1946; Cox and Hodge, 1950; Heyroth, 1951; Smith, 1951). Only those parts of it which deal with the cumulative action of fluorides are pertinent to the question of the safety of fluoridation. Chronic fluoride intoxication characterized by bone, joint, and other tissue changes has been the cause of impaired skeletal function in Danish workmen exposed to fluoride dusts as an occupational hazard (Roholm, 1937). The presence of concentrations of fluorides in excess of 5 p.p.m. in water supplies in certain parts of the world has been reported to have given rise to a number of cases of chronic fluorosis, but the reported data are inadequate to establish the threshold concentration at which storage may be expected to occur to a potentially harmful extent. A radiologic survey at Bartlett, Texas, where the water contains 8 p.p.m., revealed an increased bone density not associated with functional impairment in 11 per cent of those examined (Dean, 1944), but roentgenologic examinations of a limited number of persons living in areas where the water contained from 1.2 to 3 p.p.m., revealed no evidence of fluorosis (Hodges and others, 1941).

The fluoride concentrations in the urine of normal teen-age boys and young men closely approximate numerically those in their drinking water in regions where the water supplies contain from 0.2 to 4.7 p.p.m. (McClure, 1946). Fluorine balance studies furnish additional evidence that the human body eliminates the major portion of food- and water-borne fluoride when the quantities ingested do not exceed 4.0 to 5.0 mg. of fluoride daily (McClure, 1951), although the daily ingestion of 6.0 mg. led to demonstrable storage (Machle and Largent, 1943).

In the accumulated experience there is no evidence that the prolonged ingestion of drinking water with a mean concentration of fluorides below the level causing mottled enamel would have adverse physiological effects. Since the water supplies in various parts of the country contain considerably

greater amounts, it is desirable that epidemiologic surveys of the incidence of chronic fluorosis be made in those regions, and that further balance studies be undertaken in order to establish the facts in regard to the storage of fluoride at moderately elevated levels of intake.

Caries Studies With Fluorine in Public Water Supplies

8. In 1945, studies were begun to ascertain whether the adjustment of the fluoride content of a public water supply to the optimal level with commercially available fluorides would confer the same caries-inhibitory effect as do waters which carry the same concentrations of fluoride naturally.

Preliminary analysis of the first four years is now available on two studies in which the observations were carefully controlled: (1) the Grand Rapids, Muskegon, Aurora study (Dean and others, 1950); (2) the Newburgh, Kingston study (Ast and others, 1950-51).

Grand Rapids--Muskegon--Aurora Study

Beginning in January, 1945, sodium fluoride was added to the Grand Rapids water supply in sufficient quantities to insure continuous maintenance of a level of about 1 p.p.m. In order to establish a base line of dental caries experience prior to fluoridation, 19,680 children with history of continuous residence in Grand Rapids, Michigan, were given a complete dental examination. In addition, 4,291 children were examined in Muskegon, Michigan, a city which derives its fluoride-free water supply from the same source as does Grand Rapids i.e., from Lake Michigan. An additional 5,116 children were examined in Aurora, Illinois, where the community water has contained 1.2 p.p.m. of "natural fluoride" for years. Data from examinations conducted at Grand Rapids and Muskegon during the autumn of each year since 1945, i.e., five yearly examinations since fluoridation was begun, have been tabulated. These examinations were made on representative children from the kindergarten, first, fourth, eighth and eleventh school grades. In Grand Rapids, there has been a reduction in caries experience in the permanent teeth of children examined in 1949 as compared with the rate expected on the basis of the 1944-5 examinations, particularly in the younger ages. The apparent amount of reduction in the DMF rate per child at ages 6, 9, 13 and 16 years, was approximately 51 per cent, 36 per cent, 17 and 12 per cent, respectively. Concurrently, there has been a slight decline in the caries rates reported by Muskegon with its fluoride-free water supply but it is relatively small and inconsistent, 22 per cent in the six-year-olds and 28 per cent in the seven-year-olds. This is unexplained. In the 5-, 6- and 7-year-old groups at Grand Rapids the DMF rates now approximate those of comparable groups of children in Aurora. Preliminary analyses of the 1950 dental examinations at Muskegon and Grand Rapids indicate that the observed dental caries experience at Muskegon is again similar to that recorded in the 1944-5 base line. At Grand Rapids, a further reduction in dental caries prevalence was observed.

Newburgh--Kingston Study

In another study, beginning in May, 1945, sodium fluoride was added to the water supply of Newburgh, New York, so as to provide a content of 1.2 p.p.m., while the Kingston, New York, supply was, and has continued to be, fluorine free. At the end of four years of fluoride treatment of Newburgh's water supply

analysis has been made of the data on dental caries experience both of deciduous and permanent teeth of approximately 3,200 school children 5 to 12 years old in Newburgh, and 3,100 children of the same age in Kingston. In brief, the investigators conclude that the DMF rates among permanent teeth of the 6- to 12-year-old children in Newburgh show a consistent downward trend after four years of fluoridation, whereas the DMF rates in the control city of Kingston show no changes. The reduction in Newburgh is from 20.6 DMF per 100 permanent teeth to 13.9, or a reduction of 32.5 per cent. The rate in Kingston remained at 20.2 DMF per 100 permanent teeth. Since the first permanent molars are the teeth most affected by dental caries, a special analysis of the condition of these teeth was made. The number of caries-free first permanent molars increased in Newburgh, after four years of fluoride exposure among 6- to 9-year-old children, from 59 per 100 molars to 77. The number of caries-free permanent teeth among Kingston children of the same age remained essentially unchanged.

Other Corroborating Studies

From these two studies, therefore, it appears that the adjustment of the fluoride concentration to optimal amounts in a water supply previously deficient in this element has resulted in considerable reduction of caries in children. Just how great a reduction may be effected ultimately will have to wait upon a longer period of observation. Reports from other cities which have installed this procedure tend to corroborate the studies mentioned above (Hutton and others, 1951: Bull, 1949-50; Erlenbach and Tracy, 1946; 1948; Hill and others, 1950). Continued observations, however, are essential to establish the degree of effectiveness in higher age groups.

Choice of Compound

9. In the control studies to which reference was made in the preceding paragraph, sodium fluoride (Na F) was added to the water supplies. Assuming that the availability of fluoride ion is the same, the use of sodium silicofluoride (fluosilicate) (Na_2 Si F_6) should result in considerable savings. On the basis of experimental studies, the fluorine in sodium fluoride and sodium fluosilicate produce similar physiological effects upon rats (McClure, 1950) and are equally effective in inhibiting the development of induced dental caries in rats (Zipkin and McClure, in press). Accordingly, it is inferred that this would apply to human experience as well, although this has not yet been demonstrated. Other considerations being equal, for reasons of economy the cheaper material (fluosilicate) is recommended. In the case of smaller public water supplies, however, other factors, such as available space, handling hazards, and equipment preference, will determine the choice of the compound used.

Other Factors Affecting Prevalence of Caries

10. The statement that fluoridation of water supplies reduces tooth decay 65 per cent is postulated on an expectancy for a population using a fluoride-free water supply. When a public water supply naturally containing 0.4 to 0.5 p.p.m., of fluoride is adjusted to the optimal level (1.0 p.p.m.), the reduction in dental caries prevalence obviously would be less. Upon the basis of information at present available, it is not possible to predict how much reduction of caries will be apparent in the adult population. Other factors - genetic, dietary, bacteriologic, and the availability of dental

services, etc. - affect the prevalence of caries and vary in every community. Fluoridation is a partial caries control procedure and does not eliminate the need for other dental health measures.

Supervision, Surveys and Controls

11. The promotion, initiation, supervision, and proper operation of the fluoridation of public water supplies is a responsibility of the state department of health, acting jointly through its bureau or division of dental health and through the division of public health engineering with the collaboration of the dental and medical professions. Suitable local plans for dental health surveys before fluoridation and periodic evaluations should be set up by the dental public health program director. These surveys should provide data suitable for calculating an index of caries attack and an index of the frequency and severity of dental fluorosis (mottled enamel). Engineering aspects of fluoridation, such as tests to determine the fluoride content of the water, safety provisions, training of operators, etc., should be covered by state regulations. The statement of policy and procedure formulated by the American Water Works Association (1949) will be acceptable to most state departments of health. Municipalities contemplating the installation of fluoridation should look to the state health department for expert guidance. Many small communities would be unable to maintain satisfactory fluoridation practice without assistance. There are many so-called automatic plants applying chlorination which allegedly do not require fulltime attendance of a water works operator. Many have very limited laboratory facilities, or lack technical personnel to make accurate chemical determinations of fluoride content. Ultimately, state or regional laboratories will have to take over routine chemical examination of samples along with established bacteriological control. Provision for periodic visits by a state sanitary engineer cannot be considered adequate supervision.

Summary and Conclusions

Under normal conditions of living, fluorine is a trace element in human nutrition. A variable and important source is drinking water. Many of the public water supplies in the United States are deficient in this element. Children dependent upon such supplies have a high dental caries attack rate as compared with children living in cities having water supplies containing about 1.0 p.p.m. of fluoride. The advantage of the latter group is considerable and is of the order of one third to one half as much caries. The caries-preventive effect of adequate fluoride intake is principally conferred upon children up to about the twelfth year of life, during the period when dentine and enamel of the permanent dentition are being formed. This increased resistance to dental caries is carried over into later life to an appreciable degree. The results of experimental studies conducted in the laboratory give consistent support to the concept of the inhibitory effect of fluoride on the caries process. There is a safe margin between trace quantities in drinking water which are required for optimal dental health and that amount which produces undesirable physiological effects. The most sensitive indication of the latter is interference with normal calcification of the teeth, which is manifested in mottled enamel, or endemic fluorosis. This effect, although compatible with caries-resistant tooth structure and, within certain limits, apparently with physiological well-being, is esthetically undesirable. The level of fluoride concentration in drinking water which is associated with the appearance of mottled enamel varies with

individual susceptibility and with the amount of water consumed. The upper level of safety has been reached in the northern part of the United States in domestic water supplies containing approximately 1.0 to 1.5 p.p.m. fluorine, in the southern part of the country approximately 0.7 p.p.m. There is no reason to believe that prolonged ingestion of drinking water with a mean concentration below the level causing mottled enamel will have an adverse physiological effect. Progress reports in several communities in which sodium fluoride has been added to the water supplies of low fluoride content indicate that this procedure will reduce the caries attack rate in children. There is evidence to suggest that it will confer an appreciable measure of protection to teeth of adults.

In view of these considerations, your Committee recommends that any community which includes a child population of sufficient size, and which obtains its water supply from sources which are free from or are extremely low in fluorides, should consider the practicability and economic feasibility of adjusting the concentration to optimal levels. This adjustment should be in accord with climatic factors and a constant chemical control should be maintained. With proper safeguards, this procedure appears to be harmless. However, it should be conducted under expert dental and engineering supervision by the state board of health. It should not be undertaken unless this can be provided. How much reduction in the prevalence of caries will actually be realized in a particular community will vary according to local conditions. The procedure will supplement but not supplant other dental health measures. About one half of the population of this country is living in small villages and rural areas and will not benefit by fluoridation of public water supplies. Other provisions for preventing dental caries in this fraction of the population should be continued and developed.

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EDITORIAL

ORCHIDS RE FAIT ACCOMPLI

The American Board of Dental Public Health is now an established entity. Its organization has been completed and the mechanism of initial certification planned. Soon, in all probability, it will assume that position in professional circles that will tend to obscure the fact that it has not always existed. Before there develops a complacent acceptance of the facts that such a Board, such a "Specialty," such a certification are available to qualified applicants it seems indicated to pay tribute to those men who have worked - and we do mean "worked" - to attain the approval of such a Board and to set its administrative wheels in motion.

For it was not accomplished by the waving of a fairy wand nor in one fell swoop. To serve their intended purposes Specialty Boards must be based on regulations and requirements, the drafting of which require painstaking consideration, long hours of consultation and review, development of telling argument, quick witted mental capacity and a facility of speech. The establishment of the Board of Dental Public Health indicates that such attributes were had by those in whose hands the promulgation of the idea of such a Board was placed.

For a difficult task well done we doff our hat to the members of the Committee on Liaison With Specialty Boards, of the Founding Group and of the first official Board.

BE PREPARED

With the issuance, finally, of endorsement of the fluoridation of public water supplies by the American Medical Association, by the State and Territorial Health Officers and by the National Research Council it may seem that the last obstacle to universal support of this public health measure has been removed. Unfortunately, such is not the case. Proponents of fluoridation projects may still face opposition from (1) a few sincere and as yet merely unconvinced persons and groups and (2) from uninformed and misguided persons, groups and organizations who "deplore" the fluoridation program for reasons ranging all the way from "it's still experimental" to "it's tampering with Nature."

Instances are known wherein some of these latter groups have effectively propagandized against and defeated referenda on fluoridation. These instances may, and probably will, continue to occur. Their future frequency will in no small part depend upon the vigilance of public dental health personnel in anticipating and promptly dissipating the influence of such groups. "It can't happen here" is a dangerous philosophy for public health dentists to adopt. A better one, borrowed from the Boy Scouts, is, "Be prepared."

EDITORIAL

A.A.P.H.D. MEETING
February 3, 1952

The annual February meeting of the Executive Council of the A.A.P.H.D. was held (theoretically) in room 19 of the Hilton Hotel. Due to the failure of enough members of the Executive Council to show up for a quorum, no official business was transacted (probably due to the failure of the Secretary to send out a reminder to the Executive Committee). However, 15 of the members enjoyed and profited by a good "bull session" in the morning. We were fortunate in having the opportunity of being brought up-to-date on current legislation by Dr. Bruce Forsythe, and the need for a budget for "grant-in-aid."

In the afternoon approximately 40 individuals enjoyed a very fine program developed by Program Chairman Presnell, as follows:

1. "Target - Tooth Decay"
   (Movie)
   Frank Bertram
   State Department of Health
   Oklahoma City, Oklahoma

2. The Dentist in Civil Defense
   Russell Bunting
   Federal Civil Defense Administration
   Washington, D.C.

3. New A.D.A. Policies on Dental Inspections and Standard Classifications
   Philip Phair
   American Dental Association
   Chicago, Illinois

4. Activities of the Division of Dental Resources, Public Health Service
   Walter J. Pelton
   Public Health Service
   Washington, D.C.

Frank Bertram deserves an orchid for his movie. All agreed that it was excellent, and anyone who has not had the opportunity of seeing it should contact Frank.

Dr. Bunting presented the finest discussion on the dentist in Civil Defense your Secretary has had the opportunity to hear. All who heard him, I am sure, were left with the feeling that dental civil defense planning was in most competent hands, and that something was being accomplished even though red tape forced the wheels to turn slowly.

Phil Phair reviewed the new A.D.A. policies on the terminology for dental inspections, and classifications, giving the members an opportunity to find out the how and why. It should be helpful to all of us in our program development.

Jack Pelton, in his usual competent manner, outlined the responsibilities and activities of his Division of the U.S.P.H.S., and thus cleared up for many of us just what it was all about.

For those of you who were forced to miss this excellent meeting we hope to see you all in St. Louis.

N O T E S a n d N E W S

DELAY!

Decision to include the minutes of the Chicago semi-annual meeting in this issue will delay its publication. It was felt the delay was preferable to awaiting the May Bulletin for distribution of the official actions taken in Chicago.

PRIDE!

With justifiable pride Frank Livingston, Montana State Dental Director, advises that dental health has been included as one of seven "basic health services" established by his State Health Department. The following outline of his Division's spheres of activity indicate the status he has secured for dental health.

MONTANA STATE BOARD OF HEALTH
Division of Dental Health

Basic Activities

Maternal Health: The dental program is integrated with the general Maternal Health Program to emphasize oral health care for expectant mothers.

Crippled Children: Assistance has been provided to the Division of Child Health Services, Crippled Childrens' Service, to close or complete 13 cases requiring specialized dental service following surgery for cleft palate. 3 cases are still under treatment.

Pre-school: The dental program for this group is coordinated with Well Child Conferences in local areas: operated by referral to, or voluntary service of local dentists at conferences, in 27 cities in 8 counties.

School: The Division of Dental Health provides, without charge, all materials, including new educational material and teaching outlines, for school dental health programs. Division records for the school year 1951-1952, show 678 schools in 43 counties with 2,317 teachers, and 56,823 pupils participating in the program.

Service Programs: The Dental Caries Control and Research Unit, reactivated November 15, 1951, is now being operated to provide control dentistry, and to conduct research in Powder River County. G. W. Smith, D.D.S., is in charge of the Unit, now stationed at Broadus. Prior to deactivation of the Unit in 1948 dental service had been provided 982 children, residing in isolated areas of the state, at 6 unit stations in 2 counties.

Advisory and consultive service is provided to the Children's Dental Clinic in Butte. 19 local dentists donate one-half day per month to provide dental

care for 1,000 underprivileged children. A plan was developed which provided dental service, in the private offices, for 103 underprivileged children, City of Livingston.

State Institutions: At the request of the Superintendent, the dental department in Montana State Hospital was completely reorganized. New clinic quarters and equipment were obtained. Two dentists and a dental assistant are now on staff; under the general supervision of the Division of Dental Health. Other state institutions employing dentists, part-time or on fee basis, are provided general supervision of the oral health programs. Where dentistry for children is a major factor, the dentists on service have been provided a ten-day postgraduate course in pedodontics.

Fluoridation: The Division of Environmental Sanitation, cooperates in the fluoridation program. The Cities of Roundup, Chinook, and Bozeman have received State Board of Health approval to fluoridate the public water supply; 12 cities in 12 counties are preparing to submit applications for approval, and 16 cities in 13 counties are interested, and are also being provided advisory and consultation service.

Postgraduate Education: By January 16, 1952, 32 selected dentists will have been provided a ten-day course in pedodontics at the College of Physicians and Surgeons, San Francisco. 5 selected dentists were sent to the Oral Cancer Seminar, Colorado Medical School, Graduate Division; January, 1950.

Dental Health Education: Director, Division of Dental Health, is a special lecturer at the University of Montana, Colleges of Education, and in several schools of nursing. Lecture outlines together with up-to-date reference material are provided to local dentists conducting courses in dental health for nurses.

Films are previewed and donated to the film library, Department of Public Instruction. Traveling exhibits have been developed, as well as exhibit material for preparing dental health exhibits in local areas. Phonograph recordings on dental health, prepared by radio stars such as Bing Crosby, Bob Hope, Amos and Andy, are available for use in schools.

Lecture outlines and reference material, bibliographies on all phases of oral health, radio programs, and article outlines are available, and utilized by dentists in the local areas.

Packets of sodium fluoride powder, and illustrated pamphlets on various dental technics are provided private practitioners of dentistry.

Participation of dental personnel in seminars, conferences, workshops, and other educational meetings is arranged through the cooperation of the Division of Health Education.

Advisory and Consultation Services: Are provided on all phases of dental health programs, and dental health education to local dental societies, public health personnel, school personnel, other professional groups, and to the general public. To facilitate the use of this service several reference manuals have been developed.

Standards and staff policies for hospital dental departments have been provided to assist hospitals to obtain the certificate of accreditation of the American Dental Association. The Hospital Facilities Division cooperates fully in the endeavor to have dental departments established in hospitals.

Inter-Agency: The Division of Dental Health works very closely with personnel engaged in school lunch program activities, vocational guidance, and vocational rehabilitation. All dental programs, particularly those for children, have been coordinated with the programs conducted by dental officers of the United States Indian Service.

DYNAMIC MEETING

The next meeting of the International Academy of Oral Dynamics will be held at the Shoreham Hotel during the District of Columbia Postgraduate Clinic, March 9th through 12th. In conjunction with this meeting a continuous clinic consisting of (4) two hour sessions will be presented and every phase of this science will be covered.

Early reservations are recommended as this clinic will not be presented again for at least a year.

Please contact--Dr. James J. Greeves, Pub. Chairman
1801 K Street, N.W.
Washington 6, D.C.

NATIONAL MEETINGS

A.P.H.A. - Southern Branch - Baltimore, Md., April 17, 18, 19, 1952.

A.D.A. - St. Louis, Missouri - September 8-11, 1952.

A.P.H.A. - Cleveland, Ohio - October 20-24, 1952

INUNDATED

Reports of new cities, areas, towns and villages that have initiated or approved fluoridation of public water supplies are mounting so rapidly as to make quarterly record of them in these pages impractical. To limit such reporting to the action in cities as large as Philadelphia, Baltimore, and San Francisco would be an injustice to the numerous small cities and towns that have taken positive action on fluoridation. Common sense indicates the advisability of periodically publishing Trendley Dean's compilation on this matter.

TRAINING CONFERENCE

From Linwood G. Grace, Pennsylvania State Dental Director, comes the following announcement. (We hope the February Bulletin beats the February 26 deadline).

"Once again, the Bureau of Dental Health, in cooperation with the Pennsylvania State College, is planning another Training Conference for public school dental hygienists, to be held at State College on April 3rd, 4th and 5th, 1952.

"The general pattern of the Conference will be somewhat different from the three previous Conferences. The details have yet to be worked out, but considerable time will be devoted to group discussions. We would appreciate suggestions for topics to be discussed; also, we would appreciate your sending us problems that you may have so that they can be discussed and perhaps solved in these discussion groups. The Conference will open Thursday evening with a dinner and speaker.

"This Conference will be limited to seventy-five (75). Applications will be accepted in the order in which they are received.

"Arrangements have been made with the Nittany Lion Inn to accommodate everyone, provided two girls will arrange to room together.

"The last date for filing applications will be February 26th, 1952. The usual stipend of $25.00 will be paid to all who attend the entire Conference."

A.P.H.A. - Southern Branch

Plans for the program of the Dental Section sessions of the A.P.H.A. - Southern Branch - meeting in Baltimore, April 17-19 are nearing completion. A luncheon meeting with a guest speaker will be followed by an afternoon program with presentations as follows:

The Role of the Dental Profession in State and Local Dental Health Programs —
Dr. Allen O. Gruebbel

The Role of State Departments of Health in Local Dental Health Programs —
Dr. Carl L. Sebelius

The Role of the Dental Hygienist in Local Dental Health Programs —
Dr. William P. Kroschel

The Editor joins the Section Chairmen in hoping for the attendance of dental health personnel both from the Southern Branch jurisdiction and from other areas.

JOINS MAJORITY

With regret it is reported that Dr. Joe Doakes, Dental Director of the State of Misinformya has joined the ranks of that majority of dental personnel who refuse to contribute news items to these columns. We are now corresponding with Joe and hope to re-enlist his support.

THANKS!

Having, in the foregoing item, bemoaned the loss of Joe Doakes as a contributor the Editor's drooping spirits are revived by a card from Dr. Olin Hoffman. Thanks for the kind words, Olin.